

# VTM Connection

## Virginia's Travel Modeling Newsletter

### **NHI Travel Demand Forecasting Course Coming to Richmond in October**

The National Highway Institute (NHI)'s Introduction to Travel Demand Forecasting Course (#152054) is being hosted by VDOT in Richmond on October 2<sup>nd</sup> through October 6<sup>th</sup>. The introductory course covers the traditional four-step travel model approach of trip generation, trip distribution, mode choice, and traffic assignment in travel demand forecasting. The course also includes presentations on the development of land use forecasts, network and zone structures, and use of geographic information systems.

To reinforce the concepts taught in the classroom, the course includes hands on PC training using a training version of a commonly used travel demand forecasting software.



The registration deadline for this course is September 8<sup>th</sup>. For more information on this training opportunity, please contact Paul Agnello at (804) 786-2531 or [paul.agnello@vdot.virginia.gov](mailto:paul.agnello@vdot.virginia.gov) or visit the NHI website at: <http://www.nhi.fhwa.dot.gov/training/train.aspx>

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### **Travel Demand Modeling Policies & Procedures Manual**

VDOT staff has completed the Travel Demand Modeling Policies & Procedures Manual which establishes consistent minimum standards and guidelines for urban travel demand model development and application for urban areas within Virginia.

The manual has been reviewed by the Virginia Travel Modeling (VTM) Working Group and revisions are in the process of being made. Once the



VTM review and revision of the manual is complete, it will be made available to the public. The manual will be used to guide future urban travel demand model development and application projects within Virginia and be the cornerstone of the new Virginia Modeling System (VMS). Look for updates on the manual in the Fall edition of VTM Connection.



## **National Household Transportation Survey Add-On Program On Track**



The National Household Transportation Survey (NHTS) received a new name and new life this past spring when new resources became available to fund the national survey.

The new National Household Transportation Survey name continues the name used for the 2001 survey and replaces the National Personal Transportation Survey (NPTS) name used in the 1995 and previous surveys. The continuation of the national NHTS survey is a major boost to the Add-On Program. The national survey will increase Add-On participation, reduce the cost to Add-On participants, and allow Add-On results to be compared to national results.

Virginia officially joined the Add-On Program in July, when VDOT committed \$2.5 million for 12,000+ samples for MPO areas across the state. Data from these surveys will be used to support both metropolitan and statewide travel demand modeling and other transportation planning application efforts. The estimated survey cost is \$175/household. Some sampling will also be conducted in Northern Virginia for comparison with the Metropolitan Washington Council of Governments (MWCOCG)'s Activity Based Household Travel Survey results (see the article below). Look for updates on this survey effort in future editions of VTM Connection. For more information on Virginia's NHTS Add-On survey program, contact Paul Agnello at (804) 786-2531 or [paul.agnello@vdot.virginia.gov](mailto:paul.agnello@vdot.virginia.gov)

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## **Washington, DC Activity Based Household Travel Survey On Track**

The Metropolitan Washington Council of Governments (MWCOCG), the Virginia Department of Transportation (VDOT), and other project team members selected survey consultant NuStats to conduct a new Activity Based Household Travel Survey for the Washington, DC MPO region. The survey will include 10,000+ samples. Survey results will be used to update the Washington, DC model and to support other transportation planning efforts. This survey will provide the opportunity to develop an Activity Based model for the Washington, DC MPO and/or Northern Virginia District travel demand models, but could also be used to develop new advanced four-step trip based models. The current Washington, DC model uses a trip based Household Travel Survey conducted in 1994.

This survey will be address based rather than the traditional Random Digit Dialing (RDD) approach. Samples will be collected from 22 jurisdictions in Virginia, Maryland, West Virginia, and the District of Columbia. The survey pre-test of 800 samples is underway and will feature 600 address based samples and 200 RDD. In vehicle GPS units will be given to 250 households to augment the pre-test results. The pre-test will be completed by September, 2006. The main survey will begin in November, 2006 and be completed by October, 2007 with the final report being delivered by January, 2008.

For more information, please contact Bahram Jamei (VDOT) at (703) 383-2214 or [bahram.jamei@vdot.virginia.gov](mailto:bahram.jamei@vdot.virginia.gov) or Bob Griffith (MWCOCG) at (202) 962-3280 or [rgriffiths@mwccog.org](mailto:rgriffiths@mwccog.org).



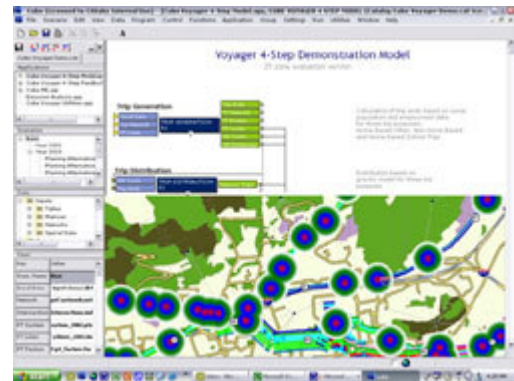
## Virginia Adopts CUBE as New Software Platform

The Virginia Department of Transportation (VDOT) has purchased Citilabs' CUBE Base and CUBE Voyager software and designated them as the official software for travel demand modeling in Virginia. The new platform replaces the old software platforms of VIPER, TP+, and MINUTP.

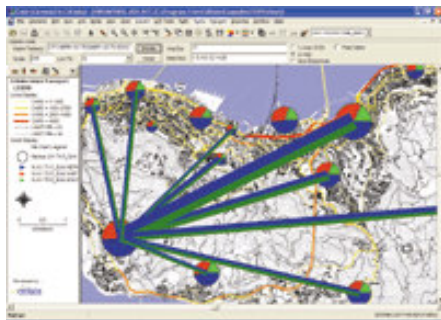
CUBE Base replaces VIPER as the software interface and network editor used by Citilabs' users. Voyager replaces TP+, TRIPS, TRANPLAN, and MINUTP as the software engine used to run models using Citilabs' software. Voyager's scripting language is generally similar to TP+ with the exception of the module used for public transit. CUBE Voyager still enables users to run models in TP+ format.

This upgrade will provide users with several benefits:

1. CUBE Base has enhanced GIS capabilities compared to VIPER and will be fully integrated with ARC-GIS when CUBE Base version 5.0 is released in late 2006 or early 2007.
2. Voyager contains enhanced ability to perform select link analysis compared to TP+.
3. Voyager contains a new transit module called Public Transport (PT) which has many advantages over the TRNBUILD transit module used by TP+.



Existing models will be converted into CUBE Voyager format using CUBE Catalog format within the next few years. Look for updates in future editions of the VTM Connection.

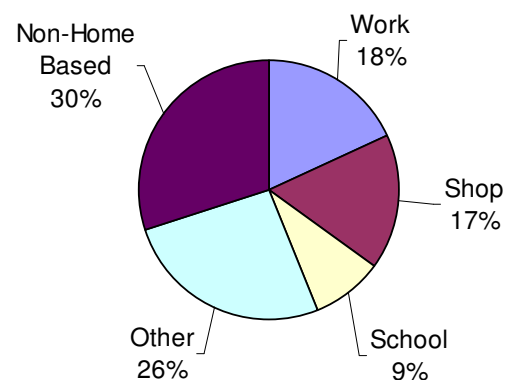


VDOT also purchased three Citilabs' CUBE extensions: CUBE Analyst, CUBE Reports, and CUBE Cargo. Formerly called "CUBE ME", CUBE Analyst is the CUBE functional library developed specifically for estimating and updating base year automobile, truck and public transit trip matrices. CUBE Analyst enables the user to exploit a wide variety of data that contribute to matrix updating and matrix development.

CUBE Reports will enable VDOT staff to more easily create graphical displays showing model results for its clients as shown in the figure: Daily Trips by Trip Purpose.

CUBE Cargo is the CUBE functional library for freight forecasting, offering methodologies for studying freight demand using a commodity-based approach. CUBE Cargo operates in conjunction with CUBE Voyager and CUBE Analyst.

**Daily Trips by Trip Purpose**



## Highlights of Virginia Travel Demand Modeling Activities

No.	District/MPO Area	Contact(s)	Current/Recent Activities
1	Washington, DC	Bahram Jamei	New Activity Based Household Travel Survey
2	Northern Virginia	Bill Mann	I-95/I-395 PPTA Study
		Ed Azimi	CTPP Study
3	Hampton Roads	Michael Hester	Mode choice model being converted from FORTRAN into TP+ Model converted into CUBE Catalog.
		Andy Pickard	Long Range Plan analysis
4	Richmond	Jeremy Raw	Preparing for Long Range Plan Model converted into CUBE Catalog
5	Tri-Cities	Jeremy Raw	Preparing for Long Range Plan Model converted into CUBE Catalog
6	Fredericksburg	Nelson Newton	Air Quality Conformity analysis
7	Roanoke	Mark McCaskill or Nelson Newton	New Land Use developed for Long Range Plan
8	Charlottesville	Paul Agnello	US 29 Study
9	Virginia Statewide Model (VSM)	Erik Johnson or Paul Agnello	2004 Global Insight Transearch Data received for eventual use in updating the freight component of the VSM

### New Staff Join Virginia Modeling Teams

Several new modeling staff have recently joined the VDOT Central Office, VDOT Northern Virginia, and Hampton Roads Planning District Commission (PDC) modeling teams:

**VDOT Central Office: Jeremy Raw and Juyin Chen**

**VDOT Northern Virginia: Joanna Knoll and Greg McFarland**

**Hampton Roads PDC: Dale Stith**

Welcome to the Virginia Modeling Team Jeremy, Juyin, Joanna, Greg, and Dale!

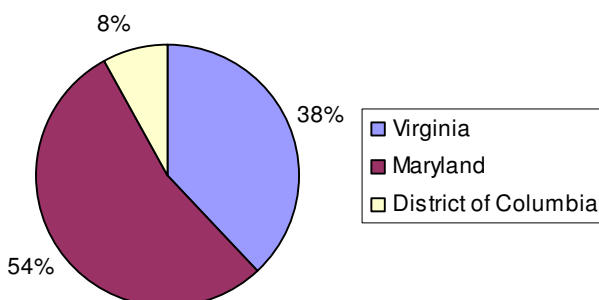


## Washington, DC CTPP Study Highlights

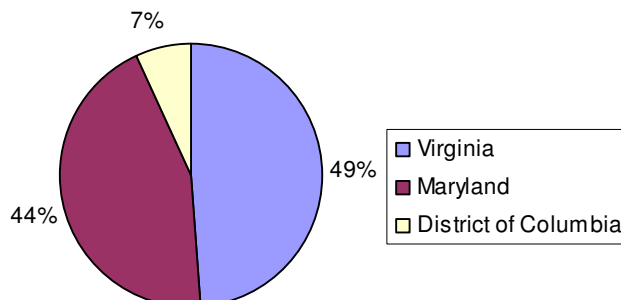
VDOT Northern Virginia staff recently completed a 2000 Census Transportation Planning Package (CTPP) study for the Washington, DC metropolitan region. The study used utilized Part 3 data by Place of Residence (Origin) and by Place of Work (Destination).

The study showed high HOV 3+ usage in Northern Virginia. Despite only having 37% of the region's households and 35% of the region's employment, Northern Virginia had 49% percent of the region's HOV 3+ users compared to 44% for Maryland and 7% for the District of Columbia. But HOV 2 usage differed considerably from HOV 3+ usage. Northern Virginia had 38% of the region's users compared to 54% for Maryland and 8% for the District of Columbia.

**HOV2 Usage By State**

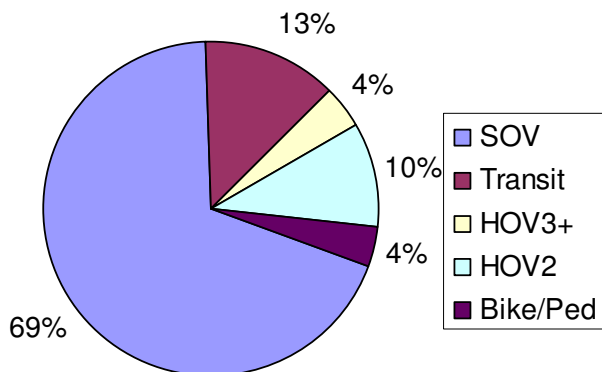


**HOV3+ Usage By State**

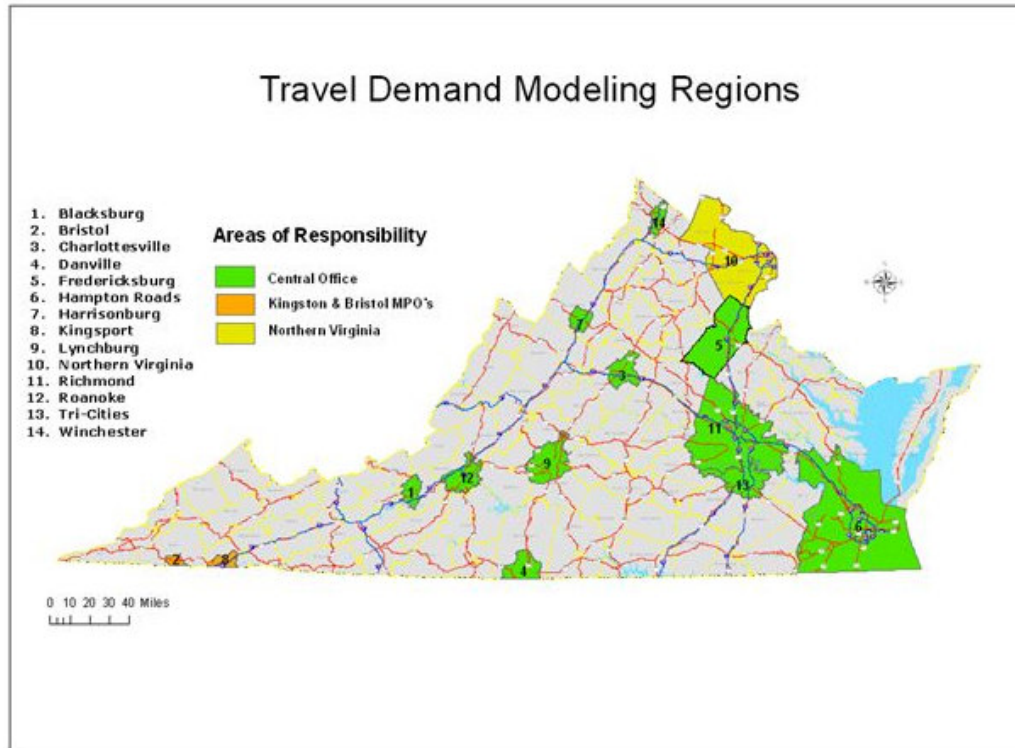


The CTPP also shows the breakdown of work travel by mode for Northern Virginia as shown in the figure below. Alternative modes to SOV driving accounted for about 31% of total work travel. Transit accounted for about 13 percent of commuting trips, followed by HOV2 with 10 percent, HOV 3+ with 4 percent, and Bike/Pedestrian with about 4 percent.

**2000 CTPP For Northern Virginia:  
Commuting Percentage by Mode**



For more information concerning this study or to obtain a copy of the report, please contact Ed Azimi at (703) 383-2213 or [ed.azimi@VDOT.Virginia.gov](mailto:ed.azimi@VDOT.Virginia.gov).



## **VDOT Travel Modeling Contacts:**

### **Travel Demand Modeling:**

Central Office: Paul Agnello (804) 786-2531 or [Paul.Agnello@VDOT.Virginia.gov](mailto:Paul.Agnello@VDOT.Virginia.gov)

Northern Virginia: Bill Mann (703) 383-2211 or [Bill.Mann@VDOT.Virginia.gov](mailto:Bill.Mann@VDOT.Virginia.gov)

## **Key Travel Modeling Websites:**

**VDOT Travel Modeling** (Available for VDOT Intranet Users Only):

<http://insidevdot/Planning/Document%20Library/Transportation%20Modeling%20Website.aspx>

**Hampton Roads PDC Travel Modeling:**

<http://www.hrpdc.org/transport/travdemand.shtml>

**Metropolitan Washington COG Travel Modeling:**

<http://www.mwcog.org/transportation/activities/models/>

**FHWA Travel Model Improvement Program (TMIP):** <http://tmip.fhwa.dot.gov/>